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AUTHOR Garside, Colleen
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ABSTRACT

This paper explores various pedagogical perspectives regarding the use of electronic mail in the classroom as a supplemental and alternative teaching and learning strategy. The paper suggests keeping an electronic journal as a form of writing to clarify and reinforce concepts discussed in class. A brief summary of strategies and assignments are described in the paper. The paper states that the utilization of electronic mail changes the communication process, altering students' relationships to the instructor, to other students, and to the learning environment, and offers examples of those effects. Advantages to using electronic mail, including convenience, cost effectiveness, and improvement of communication skills are noted but, the paper states, there are some disadvantages identified by students and faculty which include initial student resistance or professorial unwillingness to use the technology, limited access to modems or computers, and unreliability of the computer system. The paper also offers issues to consider in the utilization of electronic mail such as training, familiarity with the chosen technology, and maintaining links with the technical support staff. Contains 27 references. (CR)

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TEACHING AND LEARNING WITH ELECTRONIC MAIL:

PEDAGOGICAL PERSPECTIVES

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presented by

Colleen Garside

Weber State University Communication Department

1605 University Circle

Ogden, UT 84408-1605

(801) 626-6256

FAX: (801) 479-7472

CGARSIDE@cc.weber.edu

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Teaching and Learning with Electronic Mail: Pedagogical Perspectives

In institutions world-wide, the utilization of technology as a pedagogical supplement in and/or an alternative for the traditional college classroom is increasing. With the development of internet services like the world wide web, user groups, list servers, bulletin boards distance learning and the like, there are great possibilities for technological innovations in the classroom. One of these technologies gaining widespread use is electronic mail. It is being utilized as an integral component of the college classroom via intranet as well as internet.

This paper will explore various pedagogical perspectives regarding the utilization of electronic mail in the classroom as a supplemental and alternative teaching and learning strategy. To provide an organizational framework for the paper, pedagogical foundations of using electronic mail as a form of writing will be discussed. Then, various strategies and uses of electronic mail will be identified drawing from the experiences of educators who have integrated electronic mail into the educational experience. The next area of focus will center on the impact of electronic mail on the teaching and learning process, discussing changes that occur in the educational experience as a result of electronic mail. Finally, advantages and disadvantages identified by those who have utilized electronic mail in the classroom will be explained, followed by issues to consider when using electronic mail.

Electronic Mail as a Form of Writing

Writing is a traditional and obvious way to encourage students to become creative and critical thinkers, provided that the writing extends the thought and imagination of the writer. Writing exercises actively involve the students, transforming them from passive learners to active learners and provide insights as to how students think about material that is presented to them. In addition, writing not only unveils what students think, it also gives them an opportunity to exercise their thinking abilities (Nelson, 1989). Hence, through actively participating in writing exercises, students can develop higher order thinking skills and become better critical thinkers (Garside, 1994). This writing does not have to be done

on paper -- it can be done just as easily on electronic mail.

Because electronic mail actively engages the student in discourse about course content, like writing, it has the potential to be a solid pedagogical strategy in the classroom. For example, one commonly used technological writing exercise is the electronic journal. Electronic journals "record each student's personal individual travel through the academic world and also serve as springboards for formal writing assignments; they generate life and independent thought in a sometimes over-formal classroom atmosphere" (Fulwiler, 1987). Electronic journals provide students with an opportunity to respond to course material in ways that can help them clarify concepts and promote critical thinking about a concept. While Moss and Holder (1988) have referred to traditional journals as "thinking on paper," the electronic journal can be referred to as thinking on the monitor!

Electronic journals, like traditional paper journals, require students to respond to class material on a regular basis, often once every week or two. Students are encouraged to discuss their opinions and insights about concepts, including what was meaningful, things they didn't understand, how the material is evidenced in their everyday lives, and so forth. The electronic journal is a way to reinforce concepts discussed in class, which in turn, should help students internalize the information in a more meaningful way, rather than just rote memorization. This is just one way in which electronic mail - as a form of writing - can be used to enhance the educational experience. There are many other strategies as well.

Electronic Mail Strategies

Electronic mail is utilized for a number of different purposes in an effort to create a positive impact on the individual learning of our students. It can be used for announcements, actual assignments, student questions, class information, counseling, news items, distribution of class assignments, quizzes, grade posting, homework hints, attendance issues, and so forth (Varricchio, 1992; Poling, 1994). A brief summary of strategies and assignments are described here to give an overview of the innovative uses of electronic mail in the teaching and learning process.

At the University of Alaska Southeast, electronic mail is used three different ways. It is used as the sole delivery source for instruction, as a major feature of a course, and as a supplement to a course. As of 1992, the institution had four semester-long courses and six workshop classes conducted solely on electronic mail. Immediate access to the system at the users convenience is a prime motivating factor for its use (Fredrickson, 1992).

Mabrito (1991) reports on the utilization of electronic mail for peer evaluation in a freshman composition class. Study results showed that high apprehensive composition students participated more on electronic mail than high apprehensive composition students in face-to-face groups. High apprehensive students also relied more on the comments received when using electronic mail.

Students can send messages to all class members and instructor at one time, much as a person would communicate to all members of a live discussion group at one time (Lyness, 1992). One variation of this was utilized by a professor at a small technical university in the south who found three topics particularly difficult for her conservative Christian students to deal with: the radicalism of the Romantic poets, feminism, and homosexuality. After collecting her students' journal entries via electronic mail, she would post them anonymously for all to read and respond to on an electronic bulletin board. Students and the instructor benefitted because the instructor became aware of some of the backlash of feminism felt by some of her female students, and productive debates occurred about course topics (McQuail, 1994). In another instance, electronic mail was used in an intercultural communication class to facilitate debate on the following assertions: (1) intercultural marriage is acceptable; (2) intercultural communication should be part of any college curriculum; and (3) people from different cultures cause problems in the United States. Through this electronic mail debate component, students increased their cultural sensitivity and lessened their computer anxiety (Chen, 1994).

While the previous examples rely mostly on classroom networks, Allen (1993) suggests focusing on wide-area networks rather than just networks within a classroom. This has been done at the

University of Northern Iowa through the creation of a collaborative partnership with nine major school districts to establish relationships between practitioners and university faculty. It has positively affected their teacher education program with classroom teachers in the public schools serving as valuable resources for teacher trainees and student teachers. They have influenced university committee decisions, impacted curriculum content and methods classes, and enhanced rapport between university faculty and public school teachers. Because of interactions through electronic mail, communication barriers seem to have disappeared (Stahlhut & Hawkes, 1994). A collaborative program at the University of North Carolina at Charlotte and National Kaohsiung Normal University in Taiwan provided students an opportunity to interact with students in another part of the world. Cultural awareness was enhanced as a result of the project (Davis & Ye-Ling, 1995). On a smaller scale, students in similar courses at two institutions can communicate via electronic mail. As a way to examine relationship development in an interpersonal communication course, students at Weber State University were assigned electronic mail partners from the University of Iowa. The partners corresponded throughout the term. Students were able to analyze their own relationship development with their partner through examining discourse, self disclosure and so forth. It seemed to be an effective way to enhance learning of course content (Hirokawa & Garside, 1995). These three examples illustrate ways in which electronic mail networks can extend beyond the classroom.

As is evidenced by the preceding strategies, electronic mail is prevalent in the teaching and learning process. Perhaps the next question to be answered is, "what impact does the utilization of electronic mail have on the process of teaching and learning?"

Impact of Electronic Mail on Teaching and Learning

Technology seems to change the communication process, altering students' relationships to the instructor, to other students, and to the learning environment. The utilization of electronic mail can have a significant impact on the communication process, which, in turn, impacts the educational experience

of the student.

Johns (1994) conducted a survey of student attitudes regarding electronic interaction with faculty members. At the end of a one year time period after students were required to interact with faculty via electronic mail, students felt the medium was appropriate for asking questions, straying in touch, making decisions, exchanging confidential information, resolving disagreements, negotiating, exchanging information, and getting to know someone. The appropriateness of these areas had increased from the preliminary survey by at least 10 per cent in *all* areas. In the same survey, student use of electronic mail to interact with the instructor increased from 7 per cent to 10 per cent. These findings indicate that electronic mail is becoming an acceptable alternative to face-to-face communication. This increased usage will likely have an impact on teaching and learning because students view electronic mail as an appropriate medium of communication in many areas.

Hirokawa and Garside (1995) suggest that since students feel less risk associated with the use of electronic mail, they may be more inclined to respond to class material through this medium. Further, they indicate that perhaps more significant faculty-student interactions would be evidenced because of student perceptions of a lower risk factor.

Electronic mail also affects student-student relationships. It can de-center the self and minimize or remove some of the potential restraints that may reside in personal identities such as physical or personality distractions that negatively affect face-to-face communication (Crawford, 1994). An ethnographic study focusing on the literacy development of a college student with a speech handicap who participated in a virtual classroom where all instruction occurred through the computer showed some interesting results with regard to relationships. Electronic mail communication between the teacher and student served as a backstage support, the student developed more positive relationships with class members and as a result, the student gained respect from class members. This respect was more forthcoming through computer networking than in face-to-face interaction where traces of the student's

speech handicap might have caused resistance. The student also gained more respect for peer response. Findings suggested that an electronic environment where responses are shared with greater ease can lead to more powerful learning for some students than can a traditional classroom (Fey, 1993).

In a report on asynchronous computer teleconferencing, Hottois (1995) discussed the utilization of electronic mail in "virtual classrooms." The original intent of the project was to facilitate student-faculty interaction, yet in evaluations, he found that the computer-mediated courses had also promoted student-student interaction. Students who took courses using the medium developed a "faceless intimacy" with each other. One student wrote on the evaluation of the course: "I was excited...to learn that my teleconferencing friends from Burns will be coming to Ontario...It will be good to meet them. I almost hated to see classes end because I would lose contact with my new friends."

Electronic mail affects the learning environment by validating student voice, particularly when exemplary student comments are presented as examples to the rest of the class (Varricchio, 1992). This can result in changes in discourse. Lincoln (1992) found that students who conversed regularly on networks formed "communities" with self-conscious discussion of "courtesy" and fair intellectual exchange. She also found that mastering the technology had positive effects on self-images of men and women.

Electronic mail also produces more dissensus and conflict than collaborative methods in the classroom. In a traditional classroom, collaborative learning in student groups generally produces discussion that leads to consensus and has been criticized as suppressing difference and enforcing conformity. In contrast, since electronic mail validates student voice, it allows students to locate authority in individual readers and engage in self-disclosure that emphasizes differences. Further, conflicts rather than agreements are more prevalent. As individuals generate their dissensus and focus on their emotions, they discover powerful emotional bonds which emphasize both their differences and their similarities (Bump, 1993).

The use of electronic mail is especially effective when looking at learning as an activity rather than a location. For example, electronic mail-based tutoring upsets the temporal basis of the face-to-face paradigm for writing tutorials. Taking place in real time in a specified place, the face-to-face tutorial session has a beginning, middle and end. Further, the session must have a tangible point. In on-line tutoring, time is boundless; the power dynamics of tutoring is changed, and the text itself is de-centered. Electronic mail tutoring fosters an informal dialogue at the level of ideas instead of personality. Computer mediated discourse establishes a more egalitarian atmosphere because this paperless environment is more likely to create horizontal relationships rather than the vertical relationships created by a paper-bound environment (Coogan, 1994).

Through minimizing distractions due to physical differences, creating a faceless intimacy, giving higher profile to student voice, establishing a more egalitarian atmosphere, and providing a framework that emphasizes dissensus rather than consensus, electronic mail changes discourse and relationships. There is no doubt the use of electronic mail can impact traditional notions of teaching and learning. Before integrating electronic mail into the educational environment, however, advantages and disadvantages of implementation should be considered.

Advantages and Disadvantages of Utilizing Electronic Mail

Students and faculty indicate numerous advantages of using electronic mail. Advantages include convenience, cost effectiveness, improvement of communication skills, records of all correspondence, student participation and rapidity of response time by professors (Fredrickson, 1992). Students indicate it is a positive learning experience and appreciate the opportunity to interact with other students via electronic mail. They gain a sense of the ideas of the entire class over the term and engage in the social aspect of communicating for a specified purpose (Lyness, 1992). Students can work on their own time schedule and work with concepts which leads to more substantive, thoughtful questions in class. As a means of communication, electronic mail is a way to correspond easily and inexpensively with the

instructor and other students, and with friends and relatives in and out of the institution who have electronic mail addresses. (Manrique, 1994) Electronic mail can help students work collaboratively, solve problems and experience writing as communication (Chen, 1994). It encourages participation from students who would not normally speak out; it fosters enthusiasm and interest where other more conventional forms of communication do not, and it constitutes a more intimate relationship between communicants than do other forms of communication, while at the same time preserving anonymity (McQuail, 1994). It is applicable in many different ways at many different course levels and has considerable merit as an approach to teaching and learning (Barson, 1993).

In spite of the advantages of utilizing electronic mail, there are some disadvantages identified by students and faculty. Using email is likely to produce student resistance at first. In some instances, particularly if they are unfamiliar with using electronic mail, students don't eagerly embrace the concept of technological communication. Other disadvantages associated with electronic mail use are transmission static, limited access to modems or computers, inconvenient computer lab hours, lack of interaction among students, an unwillingness of professors to use the technology, unreliability of the computer system, slow system response, allocation of computer accounts, student comfort level, instructor comfort level, amount of technological detail, equal participation, and student evaluation. Other problems happen when students respond to old messages after discussion has progressed, and when they read their mail infrequently (Fredrickson, 1992; Hirokawa & Garside, 1995; Meacham, 1994; Shedletsky, 1992; Vician & Brown, 1994).

Issues to Consider in the Utilization of Electronic Mail

Recognizing that electronic mail has advantages and disadvantages, it is helpful to address some considerations that can lead to a more effective educational experience for students and faculty. One of the most important considerations is training. Research indicates that while students are becoming more experienced with electronic interaction (Johns, 1994), there are still many who have little or no

experience. Because of this, students should be given an orientation to the electronic mail system that includes training and instruction on setting up accounts, how to send, receive, print, and save messages (Lyness, 1992; Shedletsky, 1992). This can be done during class time or outside of class. Computer service personnel often conduct training sessions throughout the term to familiarize students with the technology. This can be an invaluable resource that doesn't require instructor or class time. In addition, instructors should be familiar with the chosen technology, be flexible concerning assignments and course requirements, plan ahead, and open and maintain communication links with the technical support staff (Vician & Brown, 1994). Stahlhut and Hawkes (1994) suggest keeping technical information simple and finding ways to introduce computer network users face-to-face to build rapport. One final consideration of utmost importance is to make sure that access to student terminals is adequate. Otherwise, students can become very frustrated and may develop negative attitudes toward computer technologies (Shedletsky, 1992).

Conclusion

This paper has discussed the rationale of using electronic mail as a form of writing in the teaching and learning process. Through examining various methods of implementing electronic mail, how it impacts the educational experience, its advantages and disadvantages, and issues to consider in using electronic mail, it is becoming more evident that electronic mail is viewed as a viable strategy in teaching and learning.

Finally, from a more encompassing pedagogical perspective, it is important for students to become aware of the technology available to them in order to be more productive citizens in a global community. One of the primary goals of education is to teach skills and knowledge necessary to function efficiently and effectively in a technological/industrial society (Kagan & Lang, 1978). The implementation and utilization of electronic mail in the classroom is an introductory step in meeting this goal.

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